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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/589,740

08/16/2006

James Van Alstine

PU0407

9504

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PRINCETON, NJ 08540

EXAMINER

KETTER, JAMES S

ART UNIT

PAPER NUMBER

1636

NOTIFICATION DATE

DELIVERY MODE

03/31/2011

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

LSUSPatents@ge.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/589,740	<b>Applicant(s)</b> VAN ALSTINE ET AL.	
	<b>Examiner</b> JAMES KETTER	<b>Art Unit</b> 1636	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 January 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

The finality of the Office Action mailed 27 September 2010 is hereby WITHDRAWN in favor of the new ground of rejection, below. Upon reconsideration of the reference to Belew et al., discussed below, the new ground of rejection is deemed proper. The delay in setting forth this rejection is regretted.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6 and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Belew et al. (of record as B2 on the IDS filed 16 August 2006).

The instant claims were described of record.

Belew et al. teaches, e.g., at the Abstract, a “method for purifying a desired substance comprising nucleic acid structure by separating substance (I) from substance (II), one of which is the desired substance, both of which have affinity for the same ligand structure, and substance (I) is smaller than substance (II). The method comprises: (i) providing substances I and II in a liquid; (ii) contacting the liquid with an adsorbent which selectively adsorbs substance I; (iii) recovering the desired substance; The adsorbent has (a) an interior part which carries a ligand structure that is capable of binding to substances I and II, and is accessible to substance I, and (b) an outer surface layer that does not adsorb substance II, and is more easily penetrated by substance I than by substance II. The use of certain anion exchangers functionalized with a

Art Unit: 1636

plurality of chargeable amine groups for the removal and/or purification of nucleic acid vectors.”

At the first paragraph at page 8, separation of RNA from plasmid is taught. At the paragraph bridging pages 8 and 9, plasmid sizes of 1 to 10 kb are taught as useable in the system. At the first paragraph at page 16, the matrix is taught to be useful as a bead from 5 to 1000 microns diameter, and at page 22, first paragraph, a particle size of 90 microns is exemplified. At page 19, last paragraph, the use of an HIC procedure is taught. At, e.g., page 10, first full paragraph, quaternary amine groups and various short alkyl amine groups are taught for anion exchange.

Belew et al. differs from the claimed invention in not specifically exemplifying the use of a matrix to permit RNA-sized molecules into the pores but exclude larger nucleic acids, including plasmids. However, it would have been obvious to one of ordinary skill in the art to have separated RNA from plasmid DNA as both RNA and plasmids are taught by Belew et al. as being subject to and separable by the disclosed matrix and methods of use, merely by selecting pore size. A particle size of 30-50 microns is also not specifically taught, but is less than two-fold smaller than the exemplified 90 microns, and within the overall teaching of 5-1000 microns, and thus this size of matrix particle would have been obvious to one of ordinary skill in the art. Finally, Belew et al. differs in not specifically exemplifying use of a matrix having quaternary amines or diethylamine groups for ion exchange. However, quaternary amines and a number of short alkyl amines are taught by Belew et al. as useable, and thus selection of quaternary amines or diethylamines would have been obvious to one of ordinary skill in the art. For each of the listed limitations, the structure or step was taught as being expected to function in the disclosed manner generally, i.e., in a predictable fashion. The selection of a particular value in a disclosed

Art Unit: 1636

range would have thus been expected to lead to the component having that value functioning as predicted, as well.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James S. Ketter whose telephone number is 571-272-0770. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ardin Marschel can be reached on 571-272-0718. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JSK  
28 March 2011

/James S. Ketter/  
Primary Examiner, Art Unit 1636